

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO INTERLOCKING JOINTS FOR PANELS

(71) I, STANLEY ARTHUR BRADBURY, a British Subject, of 50 Graigwell Avenue, Radlett, Hertfordshire, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to interlocking joints for joining two adjacent panels side by side, particularly for the purpose of building up ceiling or wall structures.

The invention provides an interlocking joint for joining two adjacent panels side by side, which joint comprises two elongate joint members, an elongated resilient seal on one of the members which engages a plain surface on the other member and two spaced apart elongated tongue and socket connections extending along the length of said members and arranged to be engaged by relative movement of the members in one direction oblique to said surface which clamps said surface to the resilient seal to form a substantially dustproof and air tight joint.

There may be provided a joint in combination with two panels to be joined by the joint wherein the joint members are formed integrally with their respective panels.

Alternatively each joint member includes a channel adapted to receive and support the edge of a panel, and there may be provided means for sealing the edge of the panel into said channel. Preferably the said tongue and recess extend generally at right angles to the plane of the panel.

Preferably one joint member has two elongate spaced sockets extending along an elongate wall member and the other joint member has one elongate tongue extending along a further elongate wall member to engage in one of said sockets and an edge of the further wall member forms a tongue

to engage in the other of said sockets with a mating channel along its outer edge adapted to receive the outer edge of the adjacent wall member.

The invention includes a ceiling or a wall comprising two or more panels joined together by interlocking joints as aforesaid.

In a ceiling as aforesaid, preferably horizontal supports are provided extending perpendicular to the length of the joint members below opposite ends of the joint members. The joint members may be clamped onto the horizontal supports.

A specific example of an interlocking joint for ceiling panels embodying the invention will now be described by way of example and with reference to the accompanying drawings in which:—

Figure 1 shows a perspective view of one interlocking joint member,

Figure 2 shows a second interlocking joint member adapted to engage with the member of Figure 1; and

Figure 3 shows a support for the joint members of Figures 1 and 2.

Referring to Figure 1 an interlocking joint member 10 made of aluminium has an upstanding wall member 11 with a downwardly facing channel 12 along its upper edge. Along the lower edge of the wall member 11 is a generally vertically directed, horizontally extending tongue 13 which forms a generally V-sectioned recess with a member 16 of the joint member. Attached to the member 16 and extending along the length of the member 16 is a resilient rubber seal 17.

Members 14, 15, 16 form the three sides of a horizontal channel within which is received and supported the edge of a ceiling panel 18 which may be coated with a plastics material or a fibrous material such as asbestos. Small projections 19 project from the upper member 14 into the ceiling panel 18 in order to securely fasten the

ceiling panel and the joint member together.

A second aluminium joint member 20 shown in Figure 2 has an upstanding wall member 21 at along the lower edge of which is a vertically directed, horizontally extending mating recess 22.

Similarly to the joint member 10 shown in Figure 1, the joint member 20 has a horizontal channel formed by the three members 23, 24, 26 to support and receive a ceiling panel. The joint members 10, 20 are adapted to interlock in that the tongue 13 fits into the mating recess 22, the wall members 11, 21 lie face to face and the upper edge of the wall member 21 is received by the downwardly facing channel 12. When the joint members are interlocked then the resilient rubber seal 17 is compressed.

It will be appreciated that when the members 10, 20 are interlocked they provide a seal which is substantially dustproof and airtight.

It will also be appreciated that dustproof ceilings are of great importance in the manufacture of electronics equipment or in the food industry where a dustproof environment is essential.

The members 10, 20 may rest upon flanges 34 of a horizontal support 27 of the type shown in Figure 3. The members 10, 20 may be provided with a recess 28 across their width such that the interlocked members 10, 20 rest on a ridge 29 of the flange 34. A rubber seal 30 may be provided between flange 34 and the member 10 beyond the ridge 29. Strip lighting may be attached to the flanges 34 of the support member 27. In addition a bridging clamp 32 is provided which clamps down on to the members 10, 20 and extends over the support 27, to which it is fastened by clamping screw 33. The members 10, 20 are thereby securely clamped to the support 27.

Although in the arrangement described, the panels are formed separately from the joint members, these members may, if required, be formed integrally with the panels by moulding, or may be formed by extrusion of any suitable material. Such a material may be aluminium, as in the above described arrangement, or may be any other suitable material, such as copper, steel, platinum, or an alloy, or may be a plastics material.

The resilient seal may be formed from rubber, as mentioned above, or from any other suitable material, for instance a resilient plastics material such as neoprene.

WHAT I CLAIM IS:—

1. An interlocking joint for joining two adjacent panels side by side, which joint

comprises two elongate joint members, an elongate resilient seal on one of the members which engages a plain surface on the other member and two spaced apart elongate tongue and socket connections extending along the length of said members and arranged to be engaged by relative movement of the members in one direction oblique to said surface which clamps said surface to the resilient seal to form a substantially dustproof and air tight joint.

2. An interlocking joint as claimed in claim 1 in combination with two panels to be joined by the joint wherein the joint members are formed integrally with their respective panels.

3. An interlocking joint as claimed in claim 1 wherein each joint member includes a channel adapted to receive and support the edge of a panel.

4. An interlocking joint as claimed in claim 3 wherein there are provided means for positively holding the edge of the panel in said channel.

5. An interlocking joint as claimed in any of the preceding claims wherein one joint member has two elongate spaced sockets extending along an elongate wall member and the other joint member has one elongate tongue extending along a further elongate wall member to engage in one of said sockets and an edge of the further wall member forms a tongue to engage in the other of said sockets.

6. An interlocking joint substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

7. A ceiling comprising two or more ceiling panels joined together by interlocking joints as claimed in any one of claims 1 to 6.

8. A ceiling as claimed in claim 7 wherein horizontal supports are provided extending perpendicular to the length of the joint members below opposite ends of the joint members.

9. A ceiling as claimed in claim 8 wherein there are provided means for clamping the joint members on to the horizontal supports.

10. A wall comprising two or more wall panels joined together by interlocking joints as claimed in any one of claims 1 to 6.

11. A sealed ceiling substantially as hereinbefore described with reference to the accompanying drawings.

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